

REMARKS

I. Introduction

In response to the Office Action dated August 19, 2009, no claims have been added, amended or canceled. Claims 1-3, 6-15 and 46-83 remain in the application. Re-consideration of the application is requested.

II. Prior Art Rejections

A. The Office Action Rejections

On page (10) of the Office Action, claims 1-3, 6-8, 10, 12-14, 50-54, 57-59, 67-73, and 75-76 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chiba et al., U.S. Patent No. 5,614,960 (Chiba) in view of Morimoto et al., U.S. Patent No. 6,005,643 (Morimoto) and further in view of Takahashi et al., U.S. Patent No. 5,537,528 (Takahashi).

On page (14) of the Office Action, claims 55-56, 63, 72-73, 80, and 82 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chiba in view of Morimoto, further in view of Takahashi and further in view of Jasinschi et al., U.S. Patent No. 6,748,158 (Jasinschi).

On page (15) of the Office Action, claims 9, 11-13, 56, 58-60, and 73 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chiba in view of Morimoto, Takahashi, Jasinschi, and in further view of Aotake, U.S. Patent No. 6,411,771 (Aotake).

On page (16) of the Office Action, claims 15, 49, 62, 66, 79, and 83 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chiba in view of Morimoto and Takahashi, in view of Jasinschi, and further in view of Tonomura et al., U.S. Patent No. 6,571,054 (Tonomura).

Applicant's attorney respectfully traverses these rejections.

B. Applicant's Claimed Invention

Independent claim 1 recites a method of processing a video stream received by a computer, the method comprising:

receiving a video stream, wherein the video stream comprises multiple frames;
analyzing the video stream to identify scene changes between frames of the video stream;
and

updating one or more user or private data fields of one or more scene-change frames of the video stream to indicate that a scene change occurs in the scene-change frame and to indicate the scene change's type, in a manner that does not affect encoded content within the frames.

Independent claims 50 and 67 recite similar limitations.

C. The Chiba Reference

Chiba describes an image data encoding method and device, and an image data reconstructing method. An encoding unit encodes the received image data in frame units. A code buffer stores the amount of codes per 1 frame. The detection condition setting unit sets a detection condition (a standard value of a code amount difference) specified according to the detection designation data entered externally. A scene determining unit calculates the difference between the amount of codes in the present frame entered from the code buffer and the amount of codes in the previous frame. If the difference is larger than the detection condition (the standard value of the code amount difference), the scene determining unit issues a COS code indicating a scene-changed frame and sets a selection signal in an active state. A switch adds the COS code to the encoded data in the present frame and externally outputs it when the selection signal indicates an active state.

D. The Morimoto Reference

Morimoto describes data hiding and extraction methods. It is also a method for embedding additional information into a video movie without substantially having an influence on the compression efficiency of the video movie and also without substantially causing degradation of the picture quality. Particularly, the method of the present invention involves specifying at least one embedding region in the frame of the video movie for embedding information, and determining a type of interframe prediction of the embedding region in correspondence with information to be embedded by referring to an embedding rule where a content of data to be embedded is caused to correspond to the type of interframe prediction of the embedding region. It is desirable that the frame in which the embedding region exists is a bidirectionally predictive-coded frame.

E. The Takahashi Reference

Takahashi describes a scene information editor that extracts, for a plurality of scenes, still image data on the representative frames of scenes from a representative frame file, and arranges the still images along with a time axis and in chronological order along a time axis for display on the screen of a display. For the time period corresponding to the part of the time axis specified by a user, the editor extracts motion image data from an LD and displays the motion image data on a TV monitor. The scene information editor also extracts the information given to those scenes from a scene information file and graphically displays the information on the screen of the display at the same time. When the user inputs an edit command, the scene information editor executes it for the edit scene information file.

F. The Jasinschi Reference

Jasinschi describes a method of indexing and searching a video database having a plurality of video shots uses 3-D camera motion parameters. For each video shot the 3-D camera motion parameters are estimated, rates of tracking, booming, dollying, panning, tilting, rolling and zooming are computed, and the results are indexed in a metadata index file in the video database according to the types of camera. The video database is searched by selecting one of the types of camera motion and submitting a query. The query is processed to identify those video shots in the video database that satisfy the query in order of priority. The highest priority video shots are displayed for the user.

G. The Aotake Reference

Aotake describes an MPEG1 real time encoder board that generates index data as an evaluation value representing the complexity of a picture. A scene change parameter representing the degree of a scene change occurring in the picture is then calculated from the index data. The scene change parameter is associated with a scene change pointer, that is, position information on a location of the picture in which a scene change occurs to a degree indicated by the scene change parameter. The scene change parameter and the scene change pointer are recorded as an index in an index file. On the other hand, an MPEG system stream output by the MPEG1 real time encoder board is stored in an MPEG file separated from the index file.

H. The Tonomura Reference

Tonomura describes an invention in the creation of an electronic image book provided with a book-type interface; a video is analyzed; images are extracted from the video under predetermined event type conditions; the extracted images are stored as index information in an index management table; images are selected from the index management table under desired conditions and laid out as a sequence of representative images in a page screen; item numbers of the laid out representative images, information about their positions on the page and information about a video file linked to the representative images are recorded in a page management table in correspondence with pages; and at the same time, representative image data corresponding to the item number is recorded in an image data table.

I. Applicant's Claims Are Patentable Over The References

Applicant's invention, as recited in independent claims 1, 50 and 67, is patentable over the references, because these claims recite a specific combination of limitations not found in the references.

The Office Action, however, asserts that Chiba, Morimoto and Takahashi, when combined, teach all the elements of independent claims 1, 50 and 67.

Applicant's attorney disagrees.

The Chiba, Morimoto and Takahashi references, taken individually or in combination, do not teach or suggest the limitations of Applicant's independent claims 1, 50 and 67 directed to "updating one or more user or private data fields of one or more scene-change frames of the video stream to indicate that a scene change occurs in the scene-change frame and to indicate the scene change's type, in a manner that does not affect encoded content within the frames." Instead, the references merely describe the following:

- In Chiba, frames are marked to indicate a scene change, but the frames do not indicate the scene change's type.
- In Morimoto, additional information can be placed in a user data field of an MPEG video bit stream, but this additional information does not indicate a scene change or the scene change's type.

- In Takahashi, a scene change information file separate from the video stream is provided for use by a scene information editor, wherein the scene change information file stores a value indicating whether a “normal” or “dissolve” scene change has occurred. However, Takahashi does not update fields in the frames of the video stream to indicate a scene change or the scene change’s type.

The Office Action asserts that a person of ordinary skill in the art would combine Chiba, Morimoto and Takahashi to accomplish Applicant’s invention, essentially by moving a scene change’s type from a file (Takahashi) to user or private data fields (Morimoto) of frames marked as having a scene change (Chiba).

Applicant’s attorney disagrees.

To establish a prima facie case of obviousness, one of the legally required criteria is that there must be some suggestion or motivation to combine and/or modify the references, and the combination must show all of the claim limitations. See MPEP §2143. Applicant’s attorney believes that there can be no motivation to combine and modify Chiba, Morimoto and Takahashi in the manner suggested to show the limitations recited in Applicant’s independent claims 1 50 and 67.

Takahashi only teaches the use of scene change information stored in a file. There would be no motivation to modify Takahashi to store the scene change information in frames as well as in the file, because the modification would duplicate the scene change information already stored in the file and Takahashi cannot process the scene change information stored in the frames. Moreover, there would be no motivation to modify Takahashi to store the scene change information in the frames instead of the file, because it would render Takahashi inoperative, in that Takahashi can only process the scene change information stored in the file and cannot process the scene change information stored in the frame.

Similarly, Chiba only teaches a frame marked to indicate a scene change, but the frame does not contain any information on the scene change’s type. There would be no motivation to modify Chiba to access a scene change’s type stored in a frame, because Chiba cannot process the scene change’s type. Indeed, there would be no motivation to modify Chiba to process a scene change’s type, because Chiba does not perform the same functions as Takahashi, namely providing a scene information editor.

Finally, as noted above, Morimoto teaches neither scene changes nor the scene change's type, but only the processing of video in an MPEG format by a computer platform.

To properly combine references, the references must be compatible with each other. Chiba, Morimoto and Takahashi are not compatible, when it comes to accessing or processing scene change data. Indeed, such a combination would require that the teachings of Chiba, Morimoto and Takahashi not merely be modified, but ignored completely.

The remaining references, Jasinschi, Aotake and Tonomura, do not overcome the deficiencies of the combination of Chiba, Morimoto and Takahashi. Recall that Jasinschi, Aotake and Tonomura were cited only against dependent claims 9, 11-13, 15, 49, 55-56, 58-60, 62-63, 66, 72-73, 79-80 and 82-83 and only for teaching limitations not found in the independent claim.

In summary, the various elements of Applicant's claimed invention together provide operational advantages over Chiba, Morimoto, Takahashi, Jasinschi, Aotake and Tonomura. In addition, Applicant's invention solves problems not recognized by Chiba, Morimoto, Takahashi, Jasinschi, Aotake and Tonomura.

Thus, Applicant's attorney submits that independent claims 1, 50 and 67 are allowable over Chiba, Morimoto, Takahashi, Jasinschi, Aotake and Tonomura. Further, dependent claims 2-3, 6-15, 46-49, 51-66 and 68-83 are submitted to be allowable over Chiba, Morimoto, Takahashi, Aotake and Tonomura in the same manner, because they are dependent on independent claims 1, 50 and 67, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-3, 6-15, 46-49, 51-66 and 68-83 recite additional novel elements not shown by Chiba, Morimoto, Takahashi, Jasinschi, Aotake and Tonomura.

In this regard, Applicant's attorney submits that claims 2-3, 6-15, 51-62 and 68-79 stand or fall with independent claims 1, 50 and 67, respectively. However, separate arguments for patentability are provided for claims 46-49, 63-66 and 80-83.

With regard to all of dependent claims 46-49, 63-66 and 80-83, the Office Action generally asserts that these limitations are shown by Jasinschi at Figs. 2-5 as camera attributes. (Technically, the Office Action only provides a basis for the rejections of claims 63-66 and 80-83, but not claims 46-49.) Applicant's attorney disagrees. In Jasinschi, the 3-D camera motion parameters for video shot in a database are estimated, rates of tracking, booming, dollying,

panning, tilting, rolling and zooming are computed, and the results are indexed in a metadata index file in the video database according to the types of camera. However, Jasinschi cannot be combined with the other references to accomplish Applicant's claimed invention because it would render Jasinschi inoperable. Specifically, Jasinschi only accesses the camera motion parameters and rates stored in the metadata index file. There would be no motivation to modify Jasinschi to access such data from user of private data fields of the video frames, instead of the metadata index file, because it would render Jasinschi inoperative.

In addition, with regard to dependent claims 46, 63 and 80, which recite "updating the user or private data fields of the scene-change frames with a percentage field that indicates a percentage of scene change in the scene-change frames," the Office Action acknowledges that the combination fails to address scene change percentage, but asserts that Jasinschi does generate a magnitude, and the Examiner takes Official Notice that representing a value as a percentage in view of magnitude would have been an obvious conversion of magnitude representation, and therefore it would have been obvious to generate percentage from magnitude, as is deemed an obvious representation of the data change or degree.

Applicant's attorney disagrees. Specifically, Applicant's attorney submits that updating the user or private data fields of the scene-change frames with a percentage field that indicates a percentage of scene change in the scene-change frames is not shown in the teachings of the prior art. Certainly, no reference cited by the Office Action teaches a similar combination of elements. Thus, the asserted "fact" that Jasinschi generates a magnitude for various camera motion parameters and rates and the magnitude teaches Applicant's percentage field in scene-change frames that indicates a percentage of scene change in the scene-change frame, cannot be considered to be common knowledge or well-known in the art per M.P.E.P. §2144.04. Consequently, Applicant's attorney requests that the Office provide documentary evidence supporting these assertions or withdraw the rejections.

III. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicant's undersigned attorney.

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate. Please charge all fees to Deposit Account No. 09-0460 of IBM Corporation, the assignee of the present application.

Respectfully submitted,

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